6*a*. Lateral view of the nuclei or young grains of Pollen.

6*b*. Vertical view of ditto on its outer face.

7. Pollen immature: the perianth being 3 lines in length.

7*a*. Represents what was the inner face prior to the escape of the nucleus from the cell.

8. Pollen viewed variously; perianth 5 lines in length, shewing the various degrees of expansion of the fissure according to the length of immersion.

9. Pollen: perianth 6¼ lines long. 9*a*. Inner membrane escape.

10. Perfect Pollen. 10*a*. Grain viewed as an opaque object.

Plate XLII. A.

Pollen of *Luffa fœtida*.

1. Portion of a mass extracted from one of the cells of an anther: flower-bud one and half line long.

2. Portion of a mass more advanced: the component cells adhering together firmly. Flower-bud about two lines long.

3. Cells of a mass more advanced: they cohere very slightly. Perianth two and half lines long.

4. The same submitted to slight pressure, shewing that each nucellus is contained in a separate cell.

5. Cells more advanced.

6. Pollen perfectly formed, but destitute of granules. Flower-bud about three and half lines long.

7. Three grains of Pollen considerably more developed; in the centre of each fold there exists a pore. Flower-bud four lines long.

8. Pollen: the folds have disappeared. Flower-bud five lines long.

9. Perfect Pollen.

All more or less magnified, and all examined in water.

Plate XLII. B.

Pollen of a species of *Hedychium*.

Fig. 1. Five *original* cells in various states of composition and cohesion. Perianth three lines long.

2. Grains of Pollen resulting from the complete separation of the above: an inner disc is visible at this period. One grain has burst by pressure.

3. Two grains of Pollen, one abortive. Perianth one inch long.

4. Perfect Pollen: one grain ruptured by pressure.

All more or less magnified, and all viewed in water.

VII.—*Sub-Himálayan Fossil Remains of the Dádúpur Collection. By Lieuts.* W. E. Baker *and* H. M. Durand, *Engineers.*

Quadrumana.

Lyell, when combating the inconclusive evidence advanced in support of the theory of the progressive development of organic life, notices the absence of remains of quadrumanous species in a fossil state, and the hypothesis which this circumstance has by some geologists been considered to countenance. He, however, draws attention

to the fact, that the animals which are found in sub-aqueous deposits, are in general such as frequent marshes, rivers, or the borders of lakes, and that such as live in trees are very rarely discovered; he adds, moreover, that considerable progress must be made in ascertaining the contemporary pachydermata before it can be anticipated that skeletons of the quadrumanous tribes should occur. Considering the great number of relics assignable to the *Pachydermata, Ruminantia,* and *Feræ,* which the Sub-Himálayan field has produced, it is not therefore surprising that at length the half jaw of a quadrumanous animal should be brought to light: the circumstance, however, being interesting in several respects, we have not deferred its communication until further research should put us in possession of more perfect specimens; the chances are against the probability of more being brought in for some time—in the interval it may be as well at once to add to the Sub-Himálayan list of fossils one species belonging to the order of the quadrumana.

The specimen in question was found in the hills near to the Sutlej, and it appears from the attached matrix to have been derived from a stratum very similar in composition to the one described as occurring at the Maginund deposit. The fragment consists of the right half of an upper jaw; the molars as to number are complete; but the first has lost some of its exterior enamel: and the fifth has likewise had a portion of the enamel from its hind side chipped off. The second and third molars are a good deal worn, and the state of the fourth and fifth such as to indicate that the animal was perfectly adult. The canine is small, but much mutilated, its insertion into the jaw and its section being all that is distinct.

From the inspection of the molar teeth, the order to which the animal belonged is sufficiently evident; but there is enough of the orbit remaining to afford additional and very satisfactory proof; the lower part of the orbit and the start of the zygomatic arch being very distinct, would alone remove all doubt from the subject; the orbits of the quadrumana being peculiar and not easily to be confounded with those of other animals.

On comparison with the delineations of the dentition of this order of animals given by F. Cuvier, the fossil bears some resemblance to the genus *Semnopithecus;* the section of the canine and the form and size of the false molars are very similar to the exemplar taken by F. Cuvier from a head of the species *Maurus,* a species found in Java: had the drawing been taken from the *Entellus,* a species which inhabits India, the comparison would in this instance have been more

Sub Himalayan fossil Remains

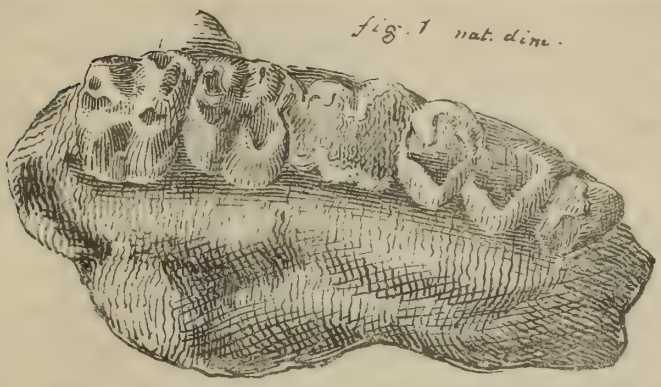

fig. 1 nat. dim.

Quadrumana

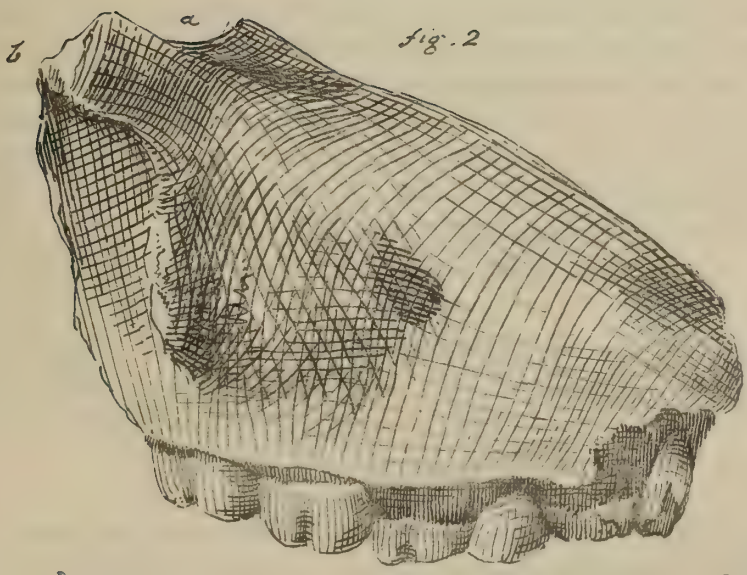

fig. 2

Baker del.

J. Prinsep lith.